I. Reference for CT-associated radiation exposure in pregnancy

II. Adverse Effects: Plain XRay - Radiation Exposure to unshielded Uterus

A. Abdominal XRay
   1. PA: 0.1 - 0.3 RADS (1 to 3 mGy)
   2. AP: <0.9 RADS (<9 mGy)
B. Lumbar Spine XRay: 0.35 to 0.62 RADS (3.5 to 6.2 mGy)
C. Pelvis XRay (AP): 0.04 to 0.24 RADS (0.4 to 2.4 mGy)
D. Hip and femur: 0.051 to 0.37 RADS (0.51 to 3.7 mGy)
E. Minimal to no radition exposure (<0.01 RADS or <0.1 mGy)
   1. Chest XRay
   2. Cervical Spine XRay
   3. Thoracic Spine XRay (AP)
   4. Upper or lower extremity (not including hip)

III. Adverse Effects: CT - Radiation exposure to unshielded Uterus

A. See CT-associated Radiation Exposure
B. CT Upper Abdomen (10 slice): 0.24 to 2.6 RADS (2.4 to 26 mGy)
C. CT Entire Abdomen: <4.6 RADS (<46 mGy)
D. CT Head: <0.05 RADS (<0.5 mGy)
E. CT Pelvis: 0.73 to 4.6 RADS (7.3 to 46 mGy)
F. CT Chest: 0.10 to 0.45 RADS (1 to 4.5 mGy)
G. CT Lumbar Spine: 3.5 RADS (35 mGy)

IV. Adverse Effects: Miscellaneous Contrast Studies

A. Barium Enema: 0.7 to 4.0 RADS (7 to 40 mGy)
B. Intravenous Pyelogram (VP): 0.36 to 1.40 RADS (3.6 to 14 mGy)
C. Ventilation-Perfusion Scan: 0.06 to 1.0 RADS (0.6 to 10 mGy)
D. Upper GI Series: 0.048 to 0.36 RADS (0.48 to 3.6 mGy)
I. Reference for CT-associated radiation exposure in pregnancy

V. Adverse Effects: Harmful Radiation Levels to fetus

A. RADS: 0
   1. Childhood Cancer risk 0.3% (background, baseline risk without radiation exposure)

B. RADS: <5 (mGy <50)
   1. Childhood Cancer risk 0.3 to 1%

C. RADS: >10 (mGy >100)
   1. Gestational age 3-4 weeks
      a. Spontaneous Abortion risk (especially in first 2 weeks)
   2. Gestational age 5-8 weeks
      a. Major fetal malformations or IUGR in surviving fetus (especially in exposure <47 days Gestational age)
   3. Gestational age 8-15 weeks (fetogenesis)
      a. Live fetus
      b. Risk of congenital malformation increased 1 to 3%
      c. Mental Retardation and other CNS effects
      d. Microcephaly
      e. Intrauterine Growth restriction
      f. Childhood Cancer risk 1-6%

D. RADS: 5-50 (mGy 50-500)
   1. Childhood Cancer risk >1-6%

E. RADS: >50 (mGy >500)
   1. Childhood Cancer risk >6%
   2. High risk of abortion, major malformations, reduced IQ

VI. Prevention: Reduction of fetal exposure

A. Avoid radiation exposure in first trimester

B. Consider cone to focus radiation beam
   1. Focus on suspected area of concern

C. Shield gravid Pelvis

D. Avoid dental radiography during pregnancy
   1. Associated with Low Birth Weight infants
   2. Likely mediated via Thyroid exposure
I. Reference for CT-associated radiation exposure in pregnancy

VII. Resources

A. CDC Radiation Exposure in Pregnancy

VIII. References